# TECHNOLOGY DRIVEN. *WARFIGHTER FOCUSED.*

C4ISR Integrated Laboratory Overview

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Presentation is cleared for Distribution A – Unlimited Public Release. 9 Jan 2012.

- CERDEC's Mission Overview

- Role in the Agile Process

  ✓ *Phase I: Whitepaper Technical Evaluation Lead*

  ✓ *Phase II: Candidate Assessments*

  ✓ *Phase III / IV / V: Network (C4ISR-Systems Integration Lab) & Vehicle (Platform Integration Facility) Integration Labs*

- Partnering Opportunities

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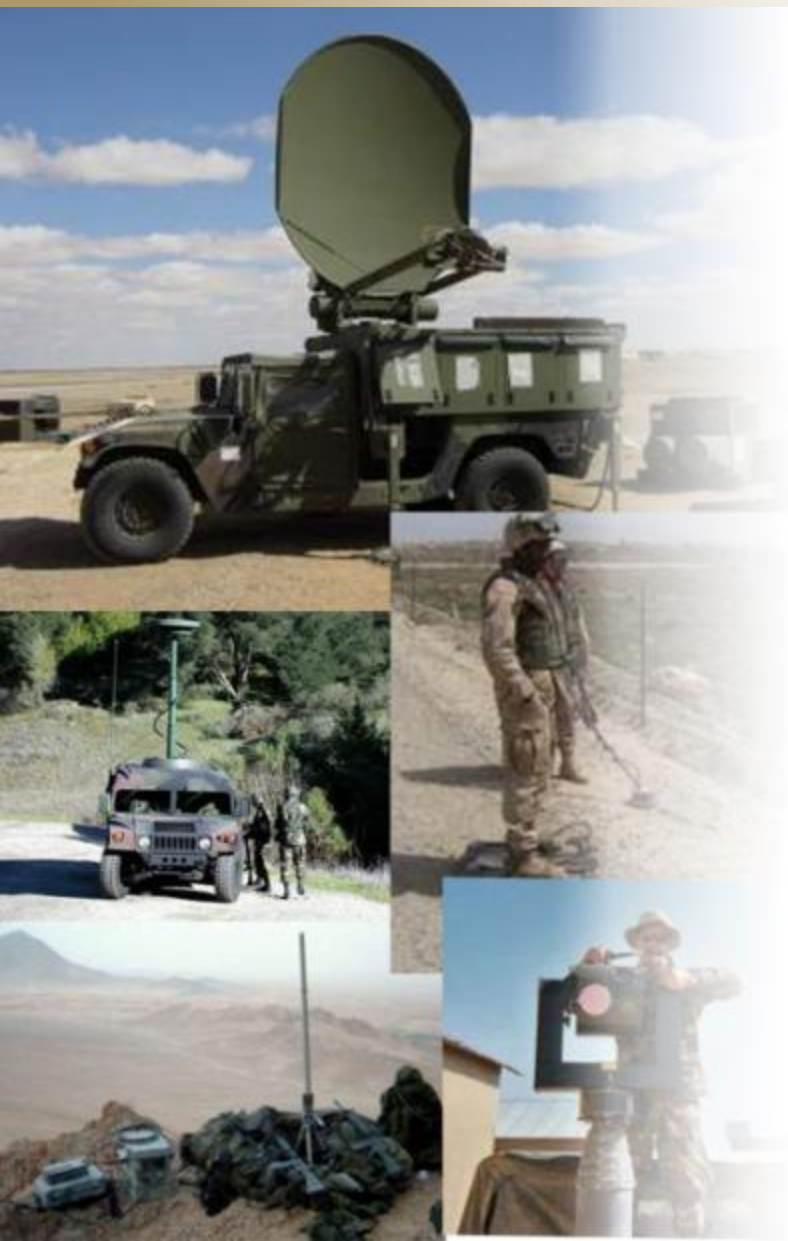
Mission:

To develop and integrate Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR) Technologies that enable Information Dominance and Decisive Lethality for the Networked Warfighter

Vision:

To employ the imagination and innovation of this nation's brightest professionals to provide America's brave sons and daughters with the most effective solutions to ensure mission success and their safe return home

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Command | **C**ontrol | **C**omputers | **C**ommunications | **I**ntelligence | **R**econnaissance | **S**urveillance

Command & Control

Space & Terrestrial Communications

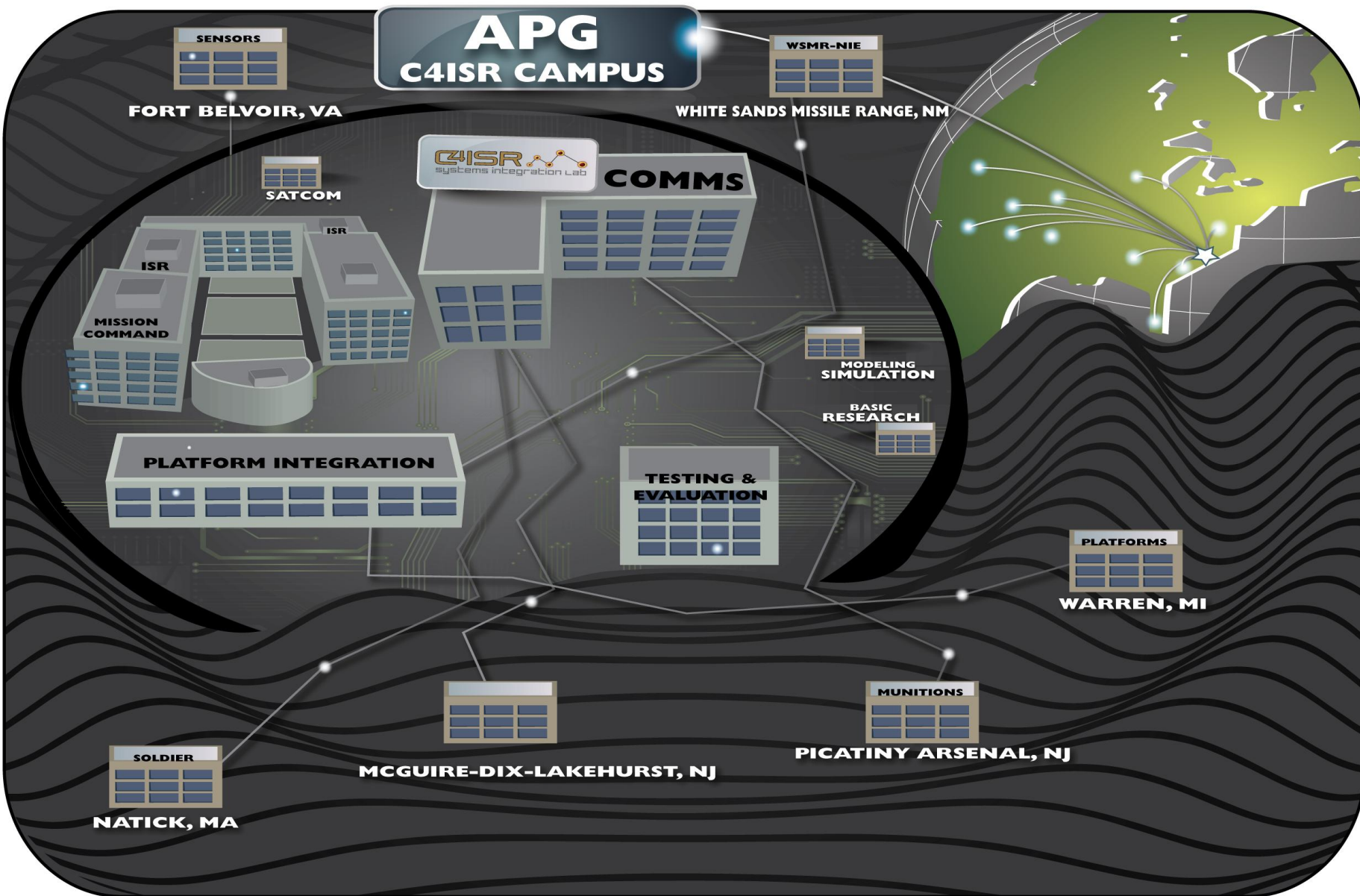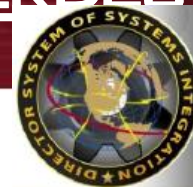Information & Intelligence Warfare

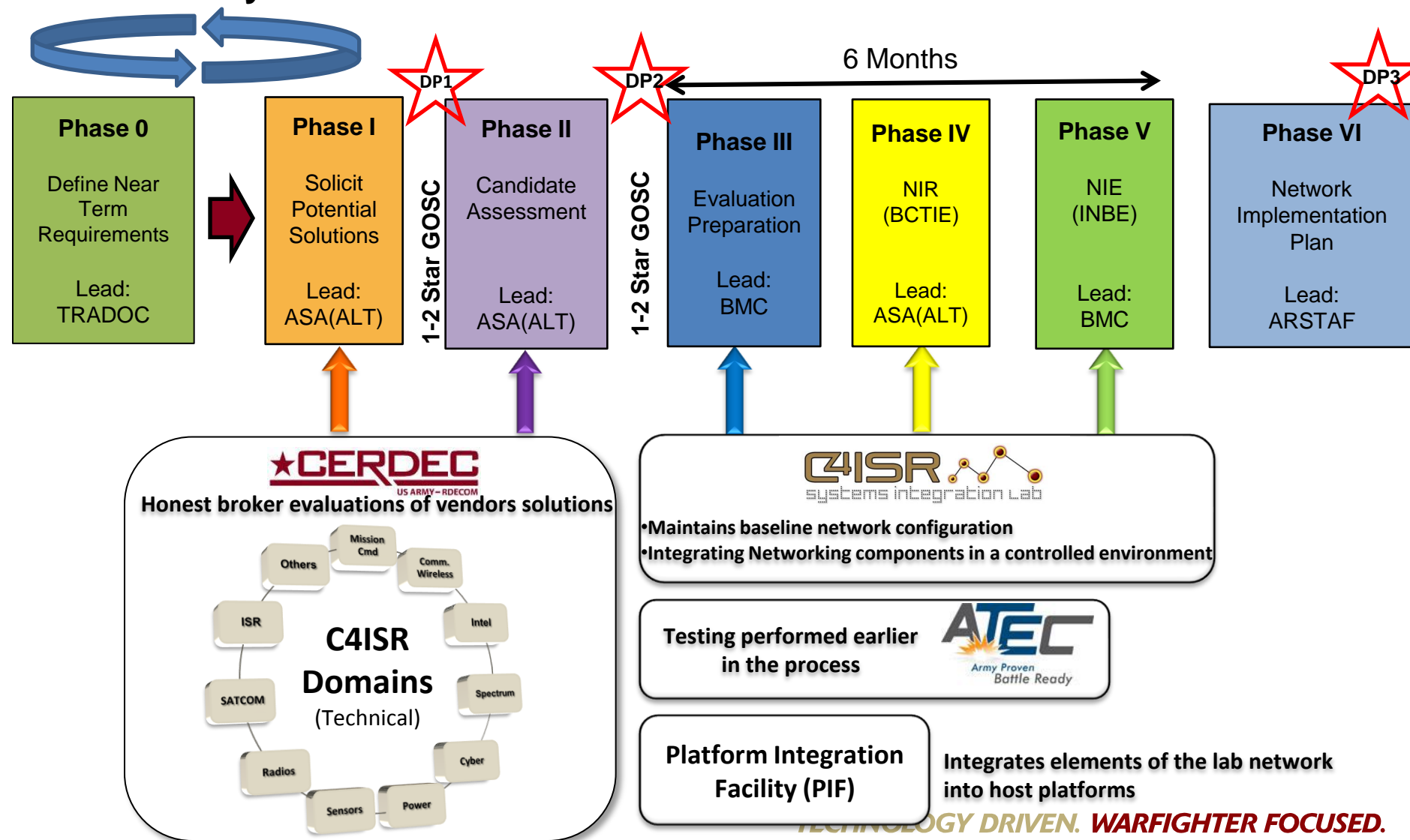Night Vision & Electronic Sensors

Product Realization

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Continuous Cycle in Phases 0-I

Phase 0

Define Near Term Requirements

Lead: TRADOC

Phase I

Solicit Potential Solutions

Lead: ASA(ALT)

DP1

1-2 Star GOSC

Phase II

Candidate Assessment

Lead: ASA(ALT)

DP2

1-2 Star GOSC

6 Months

Phase III

Evaluation Preparation

Lead: BMC

Phase IV

NIR (BCTIE)

Lead: ASA(ALT)

Phase V

NIE (INBE)

Lead: BMC

DP3

Phase VI

Network Implementation Plan

Lead: ARSTAF

Honest broker evaluations of vendors solutions

C4ISR Domains (Technical)

Mission Cmd, Comm. Wireless, Intel, Spectrum, Cyber, Power, Sensors, Radios, SATCOM, ISR, Others

- Maintains baseline network configuration
- Integrating Networking components in a controlled environment

Testing performed earlier in the process

Platform Integration Facility (PIF)

Integrates elements of the lab network into host platforms

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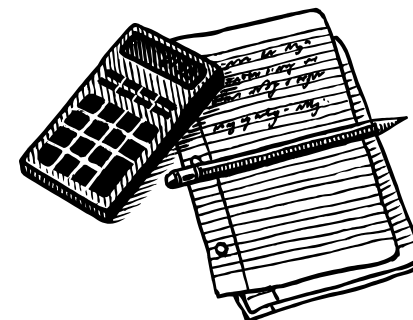
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- White-paper evaluation of Systems Under Test (SUTs) and Systems Under Evaluation (SUEs)

- Technical Factor lead and provide SME support

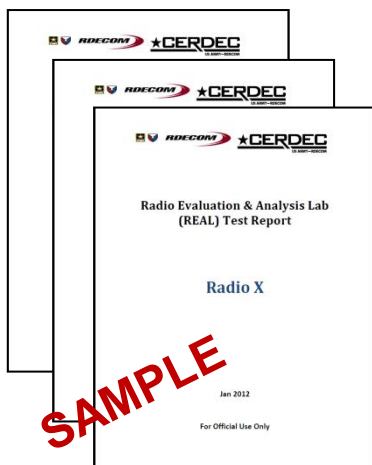- Provide technical recommendations for Decision Point

Technical Lab evaluations pre-screen candidate solutions prior to NIE

The government provides each vendor with:

1. Common Evaluation "Report Card" for each domain area

   • a-Priori evaluation criteria (tailored per event focus area)

   • Used for "Go /No Go" selection to future phases

2. Detailed evaluation report

   • Provides valuable feedback to each vendor

   • Individual results provided solely to the specific vendor – NOT made Public

   • Data is retained for government use only

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- Lessons learned from Lab Evaluations feeds the NIE architecture design

- Provides valuable insight to future phases of the Agile Process

  – Interoperability of interfaces and protocols

  – Spectrum supportability and scalability

  – Security implementation

  – System limitations and recommended configurations

Provides a ***feedback*** mechanism between the Government and Industry on how their solution may potentially integrate into the architecture

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C4ISR systems integration lab

Coming MAR 2012

BLDG 6010, Room 104 · Staging / Prep Area · POR "Core" Equipment · SUE / SUT · NETOPS · Conference & VTC · HUB (Bldg 6010) · Apps Display: Brigade, Battalion, & Company
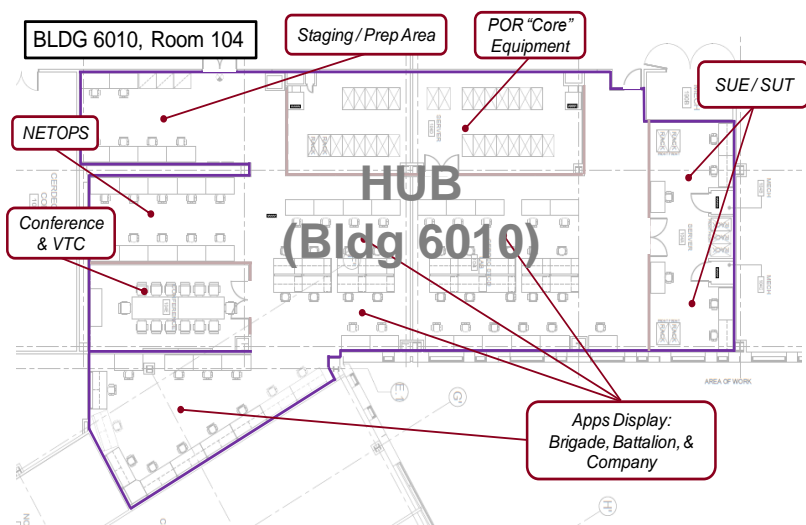
Integrated Lab Environment - Replicate 2/1 AD Brigade "Slice" in a Repeatable, Consolidated Lab Environment

Provides Risk Reduction Prior to NIE

SUE / SUT - Technical Integration: Network Configuration, Routing Protocol, Spectrum Supportability, Security, Software Compatibility, Standards Evaluation (VICTORY/COE)

System-of-System Interoperability Tests

Fiber connections interconnecting facilities virtually

Platform Integration Facility (PIF)

CAM / Fabrication — Computer-Aided Manufacturing, CNC Fabrication Machinery, Sheetmetal & Machine Shops, Cable / Electrical Manufacturing

Systems Integration — Shelter / Vehicle Integration, Integration Facility High Bays, Secure Hardstand, Inventory Control Facility

CAD / Virtual Prototyping — Computer-Aided-Design, Pro/Engineer 3D solid modeling, Tech Data Packages, Configuration Management, Virtual Prototyping Lab

Test & Evaluation — Environmental Test Lab, MIL-STD-810 Testing, Equipment Evaluation, Design for Ruggedization

Engineering Design — Mechanical Engineering, Electrical Engineering, FEA / CFD Analysis Tools, Systems Eng'g Integration Lab

Embedded Engineering — Matrix Support to PM / PEO's, Consulting & Expert Services, Interface Between Labs / PM's and Prototyping

All performed in an ISO-9001 quality management system — ISO 9001:2008 SGS

Mechanical and Electrical Engineering Design

Development & CAD/CAM Fabrication

Installation & Integration

Functional/Environmental Testing of Prototype C4ISR Shelter & Vehicle Systems

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✓ SBIR (Small Business Innovative Research)
- Respond to a SBIR Topic in CERDEC Technology Area
- CERDEC POC: Patricia Thomas, patricia.a.thomas259.civ@mail.mil, 443-861-7587
- WWW.SBIR.GOV

✓ BAA or RFP (Broad Agency Announcement / Request for Proposal)
- Respond to a BAA/RFP as part of a CERDEC Mission Program
- CERDEC POC: Bruce Testa, bruce.a.testa4.civ@mail.mil, 443-861-7666
- WWW.FBO.GOV

✓ CRADA (Cooperative Research And Development Agreement)
- CERDEC POC: Patricia Thomas, patricia.a.thomas259.civ@mail.mil, 443-861-7587

✓ ITA or CSA (Industry Test Agreement / Commercial Service Agreement)
- CERDEC POC: Bruce Testa, bruce.a.testa4.civ@mail.mil, 443-861-7666

Continuous partnership and collaboration opportunities

- CERDEC has a history of working to mitigate the risks of integrating C4ISR capability at each stage of development

- CERDEC provides technical leadership and engineering support to the Army 's most complex systems

- Team C4ISR has established the linkages that enable the cross functional integration - Mitigating risks across platforms, systems and capability.

- CERDEC provides technical support to the ASAALT SOSI office throughout phases I-IV of the Agile process